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U.S. SCHOOLS OF PUBLIC HEALTH: APPLICATIONS, STUDENTS, AND GRADUATES 1978-79 THROUGH 1986-87

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INTRODUCTION

The Association of Schools of Public Health (ASPH) operates a Data Center that collects and compiles aggregate educational statistics from each school of public health, including data on applications, total enrollment, and graduates. This report presents trend data on these three topics for the 9-year period 1978-79 through 1986-87. The data was obtained by ASPH, and it was analyzed under a purchase order from the Bureau of Health Professions. ASPH collects the statistics in October of each year for the previous academic year. Data on applications and total enrollment is for the Fall semester of each year, and data on graduates covers the entire academic year.

It is emphasized that ASPH collects data on applications rather than individual applicants to schools of public health. ASPH does not have a centralized application process to arrive at an unduplicated count of applicants at the national level. There is currently no means of determining the average number of applications submitted per applicant to various schools. Nor is there a means of determining whether there have been differences in this overall average over time, or among various types of applicants, such as by gender, citizenship, and racial/ethnic category. Therefore, application data as presented in this report should be used with caution.

Today there are 24 accredited schools of public health in the United States and Puerto Rico located at eight private and 16 public universities. The schools have a combined enrollment of over 10,000 students, and a faculty in excess of 1,800. Graduate education in schools of public health covers a wide range of topics and is organized around the following nine major areas:

- Biostatistics
- Epidemiology
- Health services administration
- Public health practice and program management
- Health education/behavioral sciences
- Environmental sciences
- Occupational safety and health
- Nutrition
- Biomedical and laboratory sciences

Graduates of schools of public health work primarily in the field of health promotion and disease prevention. They represent the basic resource pool from which federal, state and local health and environmental agencies draw their manpower needs. Graduates also work and teach in university settings. Industry relies heavily on the schools to train employees involved in industrial hygiene, occupational safety and health, environmental toxicology, and other areas.

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OVERVIEW

The 24 schools of public health are listed in Table I, along with the number of students enrolled and the number of graduates in academic year 1986-87. The basic purpose of this report is to present data on trends in applications, student enrollment, and graduates at these schools over the preceding 9-year period.

Applications

In academic year 1978-79, there were 13,000 applications reported for 20 of the then 21 schools of public health. Applications peaked during that year, and then declined rather rapidly. By 1982-83, applications for the 23 schools had decreased by about 23 percent from the peak to 10,021. Since 1982-83, applications have remained fairly steady at about 10,000 per year (Table 1-A). In 1985-86 the total number of applicants increased to 10,881.

There have been some significant changes in the type of persons applying to public health schools over the 9-year period. The percentage of applications made by women increased from 52% in 1978-79 to 60% in 1984-85. Since 1985-86, however, the proportion to females has declined relative to the proportion of males. In 1986-87, 57% of the applicants were female and 43% were male. The number of applications made by foreign students grew from 1,606 to 2,504 during the period, reaching 24 percent of the total by 1986-87 (Table 1-B).

Data on applications by racial/ethnic category has been collected since academic year 1980-81. In that year, 23 percent of the applications made by U.S. citizens were from minorities, including 10 percent from Blacks and 6 percent from Hispanics (Table 1-C). Over the years those percentages have remained fairly constant, fluctuating somewhat from year to year. The actual number of minority applicants decreased from 1,896 in 1980-81 to 1,536 in 1985-86. However, in 1986-87 the number of minority applicants increased by 17%.

As shown in Table 1-D, over half of the applications to schools of public health in 1986-87 were concentrated in three areas of specialization -- health services administration (29 percent), epidemiology (14 percent), and environmental sciences (12 percent). Since 1978-79, there have been decreases in the proportion of applications in health services administration and nutrition, and increases in epidemiology and health education/behavioral sciences.

The number of applications in relation to the number of first-year students enrolled in individual schools of public health in 1986-87 are presented in Table 1-E. By individual school, the number of applications per first-year student varied from 1.3 to 3.8; the term "application" is synonymous with "applicant" when such data is presented for individual schools. However, the national average for all schools of public health of 2.8 applications per first-year student enrolled overstates the ratio of applicants to first-year students, obviously, because some students apply to more than one school.

In 1986-87, there were 3,928 first-year students enrolled in the U.S. schools of public health. First-year enrollment constituted 39% of total enrollment in the schools in 1986-87.

Total Enrollment

In academic year 1986-87, the total enrollment in schools of public health was 10,104, a 31 percent increase over the 1978-79 level of 7,722 (Table 2-A). Total enrollment increased rather steadily through 1981-82, but then leveled off at about 9,000 students per year until 1985-86. In 1985-86, there was a 6 percent increase in total enrollment and in 1986-87 there was an additional 6% increase.

There have been a number of significant changes in the characteristics of public health students over the years. The proportion of enrolled women increased each year between 1978-79 and 1986-87, from 52 to 60 percent.

The number of foreign students has more than doubled, from 707 in 1978-79 to 1,545 in 1986-87, and their proportion of the total student population has increased from 10 to 15 percent during the period (Table 2-B).

The number and proportion of minority students has remained fairly steady since 1979-80 (Table 2-C). As a proportion of total U.S. students enrolled in schools of public health their representation has been at a level of 16-18 percent.

In terms of areas of specialization (Table 2-D), the only really clear trends involve a decrease in the proportion of students in nutrition and increases in epidemiology and health education/behavioral sciences.

In academic year 1978-79, there were 21 schools of public health in operation in 17 states and Puerto Rico. By 1986-87, there were 24 schools with the addition of the University of Florida in 1985. Schools of public health are concentrated in California, with four, and in Massachusetts, with three; no other state has more than one public health school. Table 2-E shows total enrollment in individual schools of public health for the period 1978-79 through 1986-87. The 24 schools are located in 18 states and Puerto Rico.

Graduates

There were 3,191 graduates from the 24 schools of public health in 1986-87. The proportion of female graduates increased rather steadily during the period from 51 to 60 percent (Table 3-A), and the proportion of foreign graduates showed a large increase from 10 to 18 percent (Table 3-B). The percentage of minority graduates from schools of public health declined somewhat over the years, from 17 percent in 1978-79 to 15 percent in 1986-87 (Table 3-C). Table 3-D shows the variations in the number and percent distribution of graduates by area of specialization; in 1986-87, health administration led in graduates, followed by epidemiology and environmental sciences. Table 3-E gives the number and percent of female graduates for individual schools of public health; the percentage of females ranges from 34 to 75 percent among the schools.

Expenditures

Expenditures are the total monies spent by the school of public health during the fiscal year. Expenditures do not represent the amount budgeted for the schools nor total monies available under grants and contracts.

Expenditures for the 24 schools totaled $366.5 million for FY 1986-87, a 14% increase over FY 1985-86 (see Tables 4-A and 4-B). Of total funds expended, nearly half (48%) were from institutional sources, 39% were from federal sources and 13% were from other sources. In FY 1974-75, institutional sources accounted for only 36% of expenditures, federal sources 55% and other sources 9%. Over the past thirteen years expenditures have tripled, and there has been a shift toward more reliance on institutional funds and less reliance on federal monies (Table 4-C). As will be seen in Tables 4-A, and 4-B, expenditure data is coded by school.

Table I

Number of Students and Graduates
of Individual U.S. Schools of Public Health,
by State: Academic Year 1986-87

State and school	Number of students		Number of Graduates
	Total	First Year	
Total	10,104	3,928	3,191
ALABAMA			
University of Alabama	277	105	103
CALIFORNIA			
University of California-Berkeley	474	192	214
University of California-Los Angeles	617	238	177
Loma Linda University	504	79	97
San Diego State University	207	74	50
CONNECTICUT			
Yale University	278	109	91
FLORIDA			
University of South Florida	275	44	28
HAWAII			
University of Hawaii	264	113	115
ILLINOIS			
University of Illinois	286	53	92
LOUISIANA			
Tulane University	417	153	151
MARYLAND			
Johns Hopkins University	866	232	288
MASSACHUSETTS			
Boston University	282	187	99
Harvard University	469	273	226
University of Massachusetts	171	51	37
MICHIGAN			
University of Michigan	651	273	235
MINNESOTA			
University of Minnesota	318	138	212
NEW YORK			
Columbia University	501	251	165
NORTH CAROLINA			
University of North Carolina	765	295	288
OKLAHOMA			
University of Oklahoma	322	97	67
PENNSYLVANIA			
University of Pittsburgh	581	205	112
SOUTH CAROLINA			
University of South Carolina	309	249	57
TEXAS			
University of Texas	490	187	133
WASHINGTON			
University of Washington	426	157	93
PUERTO RICO			
University of Puerto Rico	354	173	61

1. TRENDS IN APPLICATIONS

Table 1-A

Number and Percent Distribution of Applications to U.S. Schools of Public Health, by Sex: Academic Years 1978-79 Through 1986-87

Year 1/	All applications	Male	Female
		Number of applications 2/	
1978-79	13,000	5,880	6,288
1980-81	11,898	5,330	6,547
1981-82	11,078	4,683	6,383
1982-83	10,021	4,221	5,658
1983-84	9,998	4,005	5,636
1984-85	10,119	3,828	5,698
1985-86	10,115	3,926	5,680
1986-87	10,881	4,523	5,914
		Percent distribution 2/	
1978-79	100.0	48.3	51.7
1980-81	100.0	44.9	55.1
1981-82	100.0	42.3	57.7
1982-83	100.0	42.7	57.3
1983-84	100.0	41.5	58.5
1984-85	100.0	40.2	59.8
1985-86	100.0	40.9	59.1
1986-87	100.0	43.3	56.7

1/ No application data by sex were collected in 1979-80.

2/ Total number includes applications for which sex was not reported. Percent distribution is based on only those applications for which this variable is known.

Table 1-B

Number and Percent Distribution of Applications to U.S. Schools of Public Health, by Citizenship: Academic Years 1978-79 Through 1986-87

Year 1/	All applications	U.S. citizenship	Foreign citizenship
		Number of applications 2/	
1978-79	13,000	10,577	1,606
1980-81	11,898	10,070	1,828
1981-82	11,078	9,327	1,743
1982-83	10,021	7,942	1,714
1983-84	9,998	7,339	1,827
1984-85	10,119	7,586	1,810
1985-86	10,115	7,451	1,944
1986-87	10,881	7,989	2,504
		Percent distribution 2/	
1978-79	100.0	86.8	13.2
1980-81	100.0	84.6	15.4
1981-82	100.0	84.3	15.7
1982-83	100.0	82.2	17.8
1983-84	100.0	80.1	19.9
1984-85	100.0	80.7	19.3
1985-86	100.0	79.3	20.7
1986-87	100.0	76.1	23.9

1/ No application data by citizenship were collected in 1979-80. The University of Puerto Rico did not report in 1978-79, the University of Minnesota in 1980-81 and 1981-82, and San Diego State University in 1982-83.

2/ Total number includes applications for which citizenship was not reported. Percent distribution is based on only those applications for which citizenship is known.

Table 1-C

Number and Percent Distribution of Applications to U.S. Schools of Public Health by U.S. Citizens, by Racial/Ethnic Category: Academic Years 1980-81 through 1986-87

Year	Total applications by U.S. citizens	All minority applications	Racial/ethnic category			
			Asian	Black	Hispanic	American Indian
			Number of applications by U.S. citizens 1/			
1980-81	10,070	1,896	436	824	523	113
1981-82	9,327	1,863	481	760	534	88
1982-83	7,942	1,505	350	624	471	60
1983-84	7,339	1,426	327	573	472	54
1984-85	7,586	1,648	503	595	494	56
1985-86	7,451	1,536	444	550	487	55
1986-87	7,989	1,792	527	607	572	86
			Percent distribution 1/			
1980-81	100.0	22.6	5.2	9.8	6.3	1.3
1981-82	100.0	22.8	5.9	9.3	6.5	1.1
1982-83	100.0	24.0	5.6	9.9	7.5	1.0
1983-84	100.0	22.4	5.1	9.0	7.4	0.9
1984-85	100.0	24.4	7.5	8.8	7.3	0.8
1985-86	100.0	23.1	6.7	8.3	7.3	0.8
1986-87	100.0	24.5	7.2	8.3	7.8	1.2

1/ Total number includes applications for which racial/ethnic status was not reported. Percent distribution is based on only those applications for which racial/ethnic status is known.

Table 1-D

Number and Percent Distribution of Applications to U.S. Schools of Public Health, by Area of Specialization: Academic Years 1978-79, 1983-84 and 1986-87

Area of specialization 1/	1978-79		1983-84		1986-87	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
Total 2/	13,000	100.0	9,998	100.0	10,881	100.0
Biostatistics	464	4.0	444	4.6	487	4.7
Epidemiology	1,422	12.3	1,386	14.4	1,494.5	14.4
Health services administration	4,337	37.8	2,903	30.0	2,954.5	28.5
Public health practice and program management	839	7.3	786.5	8.1	866.5	8.4
Health education/ behavioral sciences	743	6.5	834.5	8.6	1,156	11.1
Environmental science	1,488	13.0	1,233	12.8	1,199.5	11.6
Occupational safety and health	225	2.0	118.5	1.2	95	0.9
Nutrition	621	5.4	391	4.1	332.5	3.2
Biomedical and laboratory sciences	251	2.2	319	3.3	292	2.8
Other areas	1,096	9.5	937.5	9.7	1,037.5	10.0
Nonspecialized (General studies)	N/A 3/	N/A 3/	309	3.2	463	4.5

1/ Applicants with dual specializations counted as .5 in each area beginning academic year 1981-82.

2/ Total number includes applications for which area of specialization is unknown and applications for nondegree training; these applications are not included in the percent distribution.

3/ Applicants in general studies included under "other areas" in 1978-79.

Table 1-E

Number of Applications in Relation to Number of First-Year Students in Individual U.S. Schools of Public Health, by State: Academic Year 1986-87

State and school	Number of applications	Number of first-year students	Number of applications per first-year student
Total	10,881	3,928	2.8
ALABAMA			
University of Alabama	138	105	1.3
CALIFORNIA			
University of Cal.-Berk.	712	192	3.7
University of Cal.-L.A.	848	238	3.6
Loma Linda University	221	79	2.8
San Diego State University	187	74	2.5
CONNECTICUT			
Yale University	341	109	3.1
FLORIDA			
University of South Florida	58	44	1.3
HAWAII			
University of Hawaii	230	113	2.0
ILLINOIS			
University of Illinois	132	53	2.5
LOUISIANA			
Tulane University	337	153	2.2
MARYLAND			
Johns Hopkins University	1,207	232	5.2
MASSACHUSETTS			
Boston University	322	187	1.7
Harvard University	744	273	2.7
University of Massachusetts	192	51	3.8
MICHIGAN			
University of Michigan	796	273	2.9
MINNESOTA			
University of Minnesota	319	138	2.3
NEW YORK			
Columbia University	609	251	2.4
NORTH CAROLINA			
University of North Carolina	985	295	3.3
OKLAHOMA			
University of Oklahoma	193	97	2.0
PENNSYLVANIA			
University of Pittsburgh	496	205	2.4
SOUTH CAROLINA			
University of South Carolina	494	249	2.0
TEXAS			
University of Texas	433	187	2.3
WASHINGTON			
University of Washington	472	157	3.0
PUERTO RICO			
University of Puerto Rico	415	173	2.4

2. TRENDS IN TOTAL ENROLLMENT

Table 2-A

Total Number and Percent Distribution of Students in U.S. Schools of Public Health, by Sex: Academic Years 1978-79 Through 1986-87

Year 1/	Total enrollment	Male	Female
	Total number of students 2/		
1978-79	7,722	3,367	3,704
1979-80	8,215	3,397	3,949
1980-81	8,486	3,023	3,728
1981-82	9,047	3,865	4,800
1982-83	8,896	3,794	5,101
1983-84	8,937	3,690	5,152
1984-85	8,957	3,627	5,329
1985-86	9,494	3,769	5,725
1986-87	10,104	4,071	6,029
	Percent distribution 2/		
1978-79	100.0	47.6	52.4
1979-80	100.0	46.2	53.8
1980-81	100.0	44.8	55.2
1981-82	100.0	44.6	55.4
1982-83	100.0	42.7	57.3
1983-84	100.0	41.7	58.3
1984-85	100.0	40.5	59.5
1985-86	100.0	39.7	60.3
1986-87	100.0	40.3	59.7

1/ The University of Puerto Rico only reported total enrollment in 1978-79 and 1979-80.

2/ Total number includes students whose sex was not reported. Percent distribution is based on only those students for whom this variable is known.

Table 2-B

Total Number and Percent Distribution of Students in U.S. Schools of Public Health, by Citizenship: Academic Years 1978-79 Through 1986-87

Year	Total enrollment	U.S. citizenship	Foreign citizenship
		Total number of students 1/	
1978-79	7,722	6,340	707
1979-80	8,215	6,532	782
1980-81	8,486	6,047	730
1981-82	9,047	7,366	1,299
1982-83	8,896	7,615	1,190
1983-84	8,937	7,617	1,212
1984-85	8,957	7,641	1,180
1985-86	9,494	7,942	1,410
1986-87	10,104	8,558	1,545
		Percent distribution 1/	
1978-79	100.0	90.0	10.0
1979-80	100.0	89.3	10.7
1980-81	100.0	89.2	10.8
1981-82	100.0	85.0	15.0
1982-83	100.0	86.5	13.5
1983-84	100.0	86.3	13.7
1984-85	100.0	86.6	13.4
1985-86	100.0	84.9	15.1
1986-87	100.0	84.7	15.3

1/ Total number includes students whose citizenship was not reported. Percent distribution is based on only those students for whom citizenship is known.

Table 2-C

Number and Percent Distribution of Students to U.S. Schools of Public Health by Racial/Ethnic Category: Academic Years 1979-80 through 1986-87

Year 1/	Total enrollment of U.S. citizens	All minority students	Racial/ethnic category			
			Asian	Black	Hispanic	American Indian
			Total number of U.S. citizens enrolled 2/			
1979-80	6,532	1,064	408	415	173	68
1980-81	6,047	1,102	393	379	242	88
1981-82	7,366	1,064	335	376	271	82
1982-83	7,615	1,200	368	403	359	70
1983-84	7,617	1,117	313	357	388	59
1984-85	7,641	1,116	302	368	392	54
1985-86	7,942	1,252	304	433	452	63
1986-87	8,558	1,454	378	484	524	68
			Percent distribution 2/			
1979-80	100.0	16.4	6.3	6.4	2.7	1.0
1980-81	100.0	18.4	6.6	6.3	4.0	1.5
1981-82	100.0	16.4	5.1	5.8	4.2	1.3
1982-83	100.0	17.1	5.2	5.8	5.1	1.0
1983-84	100.0	16.2	4.5	5.2	5.6	0.9
1984-85	100.0	15.9	4.3	5.2	5.6	0.8
1985-86	100.0	17.3	4.2	6.0	6.2	0.9
1986-87	100.0	18.2	4.7	6.1	6.6	0.9

1/ The University of Puerto Rico only reported total enrollment in 1979-80.

2/ Total number includes students whose racial/ethnic category was not reported. Percent distribution is based on only those students for whom racial/ethnic category is known.

Table 2-D

Total Number and Percent Distribution of Students in U.S. Schools of Public Health, by Area of Specialization: Academic Years 1978-79, 1983-84, and 1986-87

Area of specialization 1/	1978-79		1983-84		1986-87	
	Total enrollment	Percent distribution	Total enrollment	Percent distribution	Total enrollment	Percent distrib
Total 2/	7,722	100.0	8,937	100.0	10,104	100.0
Biostatistics	491	7.1	489.5	6.0	509	5.5
Epidemiology	880	12.8	1,171.5	14.3	1,406.5	15.2
Health services administration	1,809	26.3	2,187.5	26.6	2,500	27.0
Public health practice and program management	744	10.8	593	7.2	710	7.7
Health education/ behavioral sciences	489	7.1	730.5	8.9	999.5	10.8
Environmental sciences	821	11.9	1,233	15.0	1,146.5	12.4
Occupational safety and health	269	3.9	136.5	1.7	211.5	2.3
Nutrition	386	5.6	276	3.4	292.5	3.2
Biomedical and laboratory sciences	256	3.7	258	3.1	247	2.7
Other areas	731	10.7	781.5	9.5	779.5	8.4
Nonspecialized (General studies)	N/A 3/	N/A 3/	362	4.4	446	4.8

1/ Students with dual specializations counted as .5 in each area beginning academic year 1981-82.

2/ Total includes students whose area of specialization is unknown, and nondegree students; these students are not included in the percent distribution.

3/ Students in general studies included under "other areas" in 1978-79.

Table 2-E

Total Enrollment in Individual U.S. Schools of Public Health, by State: Academic Years 1978-79 Through 1986-87

State and school	Total number of students								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total	7,722	8,215	8,486	9,047	8,896	8,937	8,957	9,494	10,104
ALABAMA									
University of Alabama	90	129	147	165	126	135	138	248	277
CALIFORNIA									
University of Cal.-Berk	415	466	469	497	435	484	465	482	474
University of Cal.-L.A.	528	584	607	580	530	589	543	569	617
Loma Linda University 1/	323	258	271	761	722	539	392	466	504
San Diego State University	—	—	—	—	100	130	180	182	207
CONNECTICUT									
Yale University	239	270	277	287	291	272	297	274	278
FLORIDA									
University of South Florida	—	—	—	—	—	—	—	—	275
HAWAII									
University of Hawaii	336	350	352	338	312	260	215	237	264
ILLINOIS									
University of Illinois	154	144	163	216	287	263	296	330	286
LOUISIANA									
Tulane University	366	405	344	389	382	427	415	432	417
MARYLAND									
Johns Hopkins University	653	735	891	834	856	851	806	855	866
MASSACHUSETTS									
Boston University	—	—	—	280	270	282	254	335	282
Harvard University	473	455	435	403	421	378	426	421	469
University of Massachusetts	118	167	138	139	135	126	152	138	171
MICHIGAN									
University of Michigan	704	657	742	742	645	643	634	620	651
MINNESOTA									
University of Minnesota	508	509	502	448	374	369	393	405	318
NEW YORK									
Columbia University	399	413	487	431	538	480	494	506	501
NORTH CAROLINA									
University of North Carolina	660	671	670	600	637	685	739	728	765
OKLAHOMA									
University of Oklahoma	193	248	232	225	188	237	246	279	322
PENNSYLVANIA									
University of Pittsburgh	465	483	454	500	454	496	522	552	581
SOUTH CAROLINA									
University of South Carolina	117	154	154	175	192	214	274	308	309
TEXAS									
University of Texas	555	601	603	576	504	494	503	468	490
WASHINGTON									
University of Washington	290	380	404	321	294	359	335	382	426
PUERTO RICO									
University of Puerto Rico	136	136	144	140	203	224	238	277	354

1/ Off-campus students included in 1981 and subsequent years.

3. TRENDS IN GRADUATES

Table 3-A

Number and Percent Distribution of Graduates of U.S. Schools of Public Health, by Sex: Academic Years 1978-79 through 1986-87

Year 1/	All graduates	Male	Female
	Number of graduates 2/		
1978-79	2,917	1,431	1,486
1979-80	3,326	1,576	1,750
1980-81	3,168	1,479	1,689
1981-82	3,196	1,434	1,762
1982-83	3,492	1,535	1,957
1983-84	3,299	1,477	1,820
1984-85	3,047	1,253	1,794
1985-86	3,268	1,358	1,909
1986-87	3,191	1,292	1,899
	Percent distribution 2/		
1978-79	100.0	49.1	50.9
1979-80	100.0	47.4	52.6
1980-81	100.0	46.7	53.3
1981-82	100.0	44.9	55.1
1982-83	100.0	44.0	56.0
1983-84	100.0	44.8	55.2
1984-85	100.0	41.1	58.9
1985-86	100.0	41.6	58.4
1986-87	100.0	40.5	59.5

1/ Columbia University did not report in 1980-81. Data for 1978-79 through 1980-81 include bachelor degrees.

2/ Total number includes graduates whose sex was not reported. Percent distribution is based on only those students for whom this variable is known.

Table 3-B

Number and Percent Distribution of Graduates of U.S. Schools of Public Health, by Citizenship: Academic Years 1978-79 through 1986-87

Year	All graduates	U.S. citizenship	Foreign citizenship
	Number of graduates 1/		
1978-79	2,917	2,623	294
1979-80	3,326	2,923	403
1980-81	3,168	2,762	406
1981-82	3,196	2,720	476
1982-83	3,492	2,969	523
1983-84	3,299	2,652	597
1984-85	3,047	2,536	485
1985-86	3,268	2,703	553
1986-87	3,191	2,629	562
	Percent distribution 1/		
1978-79	100.0	89.9	10.1
1979-80	100.0	87.9	12.1
1980-81	100.0	87.2	12.8
1981-82	100.0	85.1	14.9
1982-83	100.0	85.0	15.0
1983-84	100.0	81.6	18.4
1984-85	100.0	84.0	16.0
1985-86	100.0	83.0	17.0
1986-87	100.0	82.4	17.6

1/ Includes graduates whose citizenship was not reported. Percent distribution is based on only those graduates for whom citizenship is known.

Table 3-C

Number and Percent Distribution of U.S. Graduates to U.S. Schools of Public Health by Racial/Ethnic Category: Academic Years 1978-79 through 1986-87

Year	All U.S. graduates	All minority graduates	Racial/ethnic category			
			Asian	Black	Hispanic	American Indian
		Number of U.S. graduates 1/				
1978-79	2,623	444	142	164	110	28
1979-80	2,923	452	113	182	132	25
1980-81	2,762	455	149	163	119	24
1981-82	2,720	383	112	143	104	24
1982-83	2,969	439	150	166	96	27
1983-84	2,652	397	112	150	110	25
1984-85	2,536	371	125	140	88	18
1985-86	2,703	377	112	150	95	20
1986-87	2,629	382	106	153	109	14
		Percent distribution 1/				
1978-79	100.0	17.0	5.4	6.3	4.2	1.1
1979-80	100.0	15.6	3.9	6.3	4.5	0.9
1980-81	100.0	17.4	5.7	6.2	4.6	0.9
1981-82	100.0	14.9	4.4	5.6	4.0	0.9
1982-83	100.0	14.9	5.1	5.6	3.3	0.9
1983-84	100.0	15.4	4.3	5.8	4.3	1.0
1984-85	100.0	14.9	5.0	5.6	3.6	0.7
1985-86	100.0	14.4	4.3	5.7	3.6	0.8
1986-87	100.0	14.9	4.1	6.0	4.3	0.5

1/ All U.S. graduates include some whose racial/ethnic category was not reported. Percent distribution is based on only those graduates for whom racial/ethnic category is known.

Table 3-D

Total Number and Percent Distribution of Graduates in U.S. Schools of Public Health, by Area of Specialization: Academic Years 1978-79, 1983-84, and 1986-87

Area of specialization 1/	1978-79		1983-84		1986-87	
	Number of graduates	Percent distribution	Number of graduates	Percent distribution	Number of graduates	Percent distr
Total	2,917	100.0	3,299	100.0	3,191	100.0
Biostatistics	135	4.6	132.5	4.0	129	4.0
Epidemiology	354	12.1	423	12.8	440	13.8
Health services administration	760	26.1	906	27.4	876.5	27.5
Public health practice and program management	298	10.2	286	8.7	304	9.5
Health education/ behavioral sciences	176	6.1	230	7.0	255	8.0
Environmental sciences	444	15.2	428.5	13.0	347	10.9
Occupational safety and health	22	0.8	60	1.8	88	2.8
Nutrition	164	5.6	120.5	3.7	110.5	3.4
Biomedical and laboratory sciences	88	3.0	90	2.7	79	2.5
Other areas	476	16.3	402.5	12.2	340	10.6
Nonspecialized (Graduate studies)	N/A /2	N/A /2	220	6.7	222	7.0

1/ Graduates with dual specializations counted as .5 in each area beginning academic yea 1981-82.

2/ Graduates in general studies included under "other areas" in 1978-79.

Table 3-E

Number of Male and Female Graduates and Percent Female in Individual U.S. Schools of Public Health, by State: Academic Year 1986-87

State and school	All graduates	Male	Female	Percent female
Total	3,191	1,292	1,899	59.5
ALABAMA				
University of Alabama	103	51	52	50.5
CALIFORNIA				
University of Cal.-Berk.	214	66	148	69.2
University of Cal.-L.A.	177	60	117	66.1
Loma Linda University	97	36	61	62.9
San Diego State University	50	21	29	58.0
CONNECTICUT				
Yale University	91	27	64	70.3
FLORIDA				
University of South Florida	28	7	21	75.0
HAWAII				
University of Hawaii	115	37	78	67.8
ILLINOIS				
University of Illinois	92	30	62	67.4
LOUISIANA				
Tulane University	151	99	52	34.4
MARYLAND				
Johns Hopkins University	288	125	163	56.6
MASSACHUSETTS				
Boston University	99	31	68	68.7
Harvard University	226	126	100	44.2
University of Massachusetts	37	11	26	70.3
MICHIGAN				
University of Michigan	235	99	136	57.9
MINNESOTA				
University of Minnesota	212	83	129	60.8
NEW YORK				
Columbia University	165	52	113	68.5
NORTH CAROLINA				
University of North Carolina	288	110	178	61.8
OKLAHOMA				
University of Oklahoma	67	24	43	64.2
PENNSYLVANIA				
University of Pittsburgh	112	41	71	63.4
SOUTH CAROLINA				
University of South Carolina	57	26	31	54.4
TEXAS				
University of Texas	133	64	69	51.9
WASHINGTON				
University of Washington	93	46	47	50.5
PUERTO RICO				
University of Puerto Rico	61	20	41	67.2

4. EXPENDITURES

TABLE 4-A
U.S. SCHOOLS OF PUBLIC HEALTH
EXPENDITURES 1986-87

UNIVERSITY FUNDS

SCHOOL	SALARY	FRINGE	TOTAL SALARY AND FRINGE	STUDENT AID	NON-PERSONNEL EXPENSES	INDIRECT EXPENSES	TOTAL UNIVERSITY
25	9177545	1440678	10618223	0	2295064	6518637	19431924
26	8749695	2048945	10798640	3823356	3887889	3498917	22008802
27	6274446	1290654	7565100	589706	580627	5766356	14501789
28	5143891	1138152	6282043	0	538368	1643017	8463428
29	1803019	481879	2284898	231896	615149	2254822	5386765
30	3089900	360800	3450700	0	254900	1104200	4809800
31	4860151	1045123	5905274	0	863079	1990077	8758430
32	7510489	1543152	9053641	838124.	4239132	4540555	18671452
33	3096633	672686	3769319	24098	780158	5214492	9788067
34	1315084	486581	1801665	0	159908	541003	2502576
35	2020196	408672	2428868	71114	808868	1254520	4563370
36	1153422	215284	1368706	0	104524	473068	1946298
37	1489766	362238	1852004	42864	533259	1006648	3434775
38	1313869	0	1313869	0	49048	0	1362917
39	3190136	793100	3983236	56413	966815	4032549	9039013
40	1640814	426612	2067426	0	137908	930342	3135676
41	5309827	1221260	6531087	0	860181	3573410	10964678
42	2939013	643644	3582657	33500	1934498	1454559	7005214
43	1696412	380028	2076440	140494	509014	1308157	4034105
44	1497652	257875	1755527	121396	195541	214908	2287372
45	2093596	441510	2535106	151050	668604	583840	3938600
46	1718239	230244	1948483	73141	397812	2787626	5207062
47	951796	255294	1207090	0	24738	0	1231828
48	1377660	270695	1648355	64179	536419	56622	2305575
Total	79413251	16415106	95828357	6261331	21941503	50748325	174779516

TABLE 4-B
U.S. SCHOOLS OF PUBLIC HEALTH
EXPENDITURES 1986-87

GRANTS & CONTRACTS/TOTAL EXPENDITURES

	U.S. GOVERNMENT				OTHER SOURCES					
SCHOOL	RESEARCH GRANTS	TRAINING GRANTS	STUDENT AID	SUB-TOTAL	RESEARCH GRANTS	TRAINING GRANTS	STUDENT AID	SUB-TOTAL	TOTAL GRANTS	TOTAL EXPEND.
25	6955021	2147159	870076	9972256	1413797	743658	30044	2187499	12159755	31591679
26	36296938	1176409	3578982	41052329	10007009	2201617	1576481	13785107	54837436	76846238
27	3225745	604720	899902	4730367	2589778	716612	335321	3641711	8372078	22873867
28	1807655	420555	479304	2707514	1490379	70881	103096	1664356	4371870	12835298
29	2318448	712620	808693	3839761	396528	146462	16713	559703	4399464	9786229
30	683300	688300	144200	1515800	503800	121200	38000	663000	2178800	6988600
31	2914898	791154	0	3706052	470028	83483	0	553511	4259563	13017993
32	15094975	1280893	2425261	18801129	7029249	224944	512847	7767040	26568169	45239621
33	13653723	1105937	273709	15033369	1985464	424069	2115	2411648	17445017	27233084
34	303574	764548	140252	1208374	0	0	0	0	1208374	3710950
35	4120256[1]	320112	0	4440368	284772[1]	98002	0	382774	4823142	9386512
36	208843	150562	66851	426256	9483	28138	0	37621	463877	2410175
37	505655	195777	16038	717470	514252	35484	0	549736	1267206	4701981
38	79010	59638	0	138648	2762372	0	162768	2925140	3063788	4426705
39	6549457	830708	47192	7427357	2438573	397330	8088	2843991	10271348	19310361
40	1727504	330318	149409	2207231	1545	142774	0	144319	2351550	5487226
41	2278618	176090	171952	2626660	1399761	24009	10147	1433917	4060577	15025255
42	5012012	792656	767151	6571819	1647886	0	54491	1702377	8274196	15279410
43	5259798	663802	93184	6016784	1045886	0	32000	1077886	7094670	11128775
44	1280863	0	181492	1462355	0	0	0	29718[2]	1492073	3779445
45	1710973	453025	223821	2387819	864646	395690	7690	1268026	3655845	7594445
46	2568831	852444	123727	3545002	2716576	315134	1844	3033554	6578556	11785618
47	1550947	0	78286	1629233	502641	0	0	502641	2131874	3363702
48	137833	67523	0	205356	187395	8375	0	195770	401126	2706701
Total	116244877	14584950	11539482	142369309	40261820	6177862	2891645	49361045[3]	191730354[3]	366509870[3]

[1] Includes multipurpose funds.

[2] Foundation monies, undesignated use.

[3] Other sources sub-total, total grants, and total expenditures columns include 29718 in miscellaneous monies from school 44.

TABLE 4-C
U.S. SCHOOLS OF PUBLIC HEALTH
EXPENDITURES

FY	INSTITUTIONAL SOURCES		FEDERAL SOURCES		OTHER SOURCES		TOTAL EXPENDITURES
1974-75	$43,613,028	35.7%	$67,130,975	54.9%	$11,521,854	9.4%	$122,265,857
1976-77	54,456,054	38.0	73,281,169	51.1	15,554,536	10.9	143,291,759
1977-78	63,821,421	39.8	79,581,169	49.6	16,969,924	10.6	160,372,514
1979-80	82,227,292	40.6	95,920,799	47.4	24,330,800	12.0	202,478,891
1980-81	91,696,770	41.6	105,123,883	47.7	23,580,608	10.7	220,401,261
1981-82[1]	109,925,409	45.9	101,734,232	42.4	28,091,885	11.7	239,751,526
1982-83[1]	112,532,050	48.9	90,662,549	39.4	27,080,347	11.8	230,274,946
1983-84[1]	112,476,638	48.9	84,707,805	36.8	32,730,286	14.2	229,914,729
1984-85	148,485,900	51.8	105,897,277	36.9	32,253,444	11.3	286,636,621
1985-86	161,011,821	50.1	121,036,930	37.7	39,042,085	12.2	321,090,836
1986-87	174,779,516	47.7	142,369,309	38.8	49,361,045	13.5	366,509,870

1 One school did not report. In 1982-83 a small school was not included, and total expenditures were not greatly affected. However, in 1983-84 one of the largest schools was not included, and expenditures are significantly underreported.